DOCUMENT RESUME

ED 255 595 UD 024 143

AUTHOR Hirano-Nakanishi, Marsha
TITLE Hispanic School Dropouts: The Extent and Relevance of Pre-High School Attrition and Delayed Education.
INSTITUTION National Center for Bilingual Research, Los Alamitos, Calif.
SPONS AGENCY National Inst. of Education (ED), Washington, DC.
REPORT NO NCBR-R-17
PUB DATE [84]
CONTRACT NIE-00-CA-80-0001
NOTE 35p.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Age Differences; *Dropout Characteristics; *Dropout Rate; *Dropouts; Educationally Disadvantaged; High Schools; *Hispanic Americans; Immigrants; Influences; Junior High Schools; Language Dominance; *Secondary School Students; Student Promotion

ABSTRACT

Using the 1976 Survey of Income and Education, and focusing on Hispanics aged 14 to 25, analyses were conducted to assess when in the schooling process Hispanics drop out. Findings suggest that over 40 percent of all Hispanic dropouts leave school before reaching the 10th grade, with most of the pre-high-school attrition occurring at the junior high school level. Dropping out among Hispanics peaks in the 11th grade (30 percent of all Hispanic dropouts), followed by a sharp decline in the 12th grade (7 percent). Analysis of descriptive statistics regarding pre-high-school attrition and delay suggests that regional differences in policies regarding school leaving and delay may exist, that sophomore-aged Puerto Ricans are most likely to experience delay among Hispanic subgroups, and that socioeconomic, language-related and immigration factors are related to delay and pre-high-school attrition. In view of these findings, it is important that researchers focus on the junior high school period in which significant numbers of Hispanic youth drop out of school and/or experience substantial delays in their educational progress. Furthermore, pre-high-school attrition statistics should be regarded as social indicators and analyzed on a regular basis for Hispanics and other relevant subgroups, in order to review trends regarding the attrition issue. (KH)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED255595

HISPANIC SCHOOL DROPOUTS: THE EXTENT AND RELEVANCE OF PRE-HIGH SCHOOL ATTRITION AND DELAYED EDUCATION

Marsha Hirano-Nakanishi

R-17

Reports

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

This document has been reproduced as received from the person or organization originating it.

Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

UD024143

national center for bilingual research, 4665 lampson avenue, los alamitos, ca 90720

HISPANIC SCHOOL DROPOUTS: THE EXTENT AND RELEVANCE OF PRE-HIGH SCHOOL ATTRITION AND DELAYED EDUCATION

Marsha Hirano-Nakanishi

R-17

National Center for Bilingual Research, 4665 Lampson Avenue, Los Alamitos, CA 90720, telephone (213) 598-0481

The research in this publication was prepared under Cooperative Agreement 00-CA-80-0001 from the National Institute of Education, Department of Education. Its contents do not necessarily reflect the views of the National Institute of Education or of any other agency of the United States government, and no official endorsement should be inferred.

BEST COPY AVAILABLE

ABSTRACT

Hispanics have a high dropout rate from school. Using the 1976 Survey of Income and Education, analyses were conducted to assess when in the schooling process Hispanics drop out from school. Focusing on Hispanics, aged 14 to 25 years, findings suggest that 40 percent of all Hispanic dropouts leave school before reaching the 10th grade, with most of the pre-high school attrition occurring at the junior high school level. Dropping out among Hispanics peaks in the 11th grade (30 percent of all Hispanic dropouts), followed by a sharp decline in the 12th grade (7 percent). Pre-high school attrition clearly is a serious problem for Hispanics, suggesting the need for investigations focusing on the critical junior high school period in which significant numbers of Hispanic youth not only drop out of school, but also experience substantial delays in their educational progress. It is also suggested that pre-high school attrition statistics be placed in the category of social indicators which are analyzed on a regular basis for Hispanics as well as other relevant subgroups, in order to review trends regarding this most serious issue.

HISPANIC SCHOOL DROPOUTS: THE EXTENT AND RELEVANCE OF PRE-HIGH SCHOOL ATTRITION AND DELAYED EDUCATION

INTRODUCTION

Dropping out of school among Hispanic youth is a severe problem. Estimated dropout rates for Hispanic youth range from 20 to 40 percent, and these rates are up to three times as high as those reported for non-Hispanics (Steinberg, Blinde & Chan, 1982; Rumberger, 1981; Brown, Rosen, Hill & Olivas, 1980; U.S. Commission on Civil Rights, 1978). Examination of the causes, correlates and processes underlying the phenomenon of premature school exit among Hispanics and between Hispanics and non-Hispanics has received increased attention in recent years by way of conceptual discussion (see, e.g., Nielsen, 1983; Steinberg, Blinde & Chan, 1982; Carnegie Council, 1979; Carter & Segura, 1979) and empirical investigation (see, e.g., Fligstein & Fernandez, 1982; Hirano-Nakanishi & Diaz, 1982; Rumberger, 1981; Aspira, 1976).

Delayed Education and Dropping Out

In most accounts dropping out is viewed as an act occurring in high school which results from a longitudinal and dynamic process of interactions among family, school, peer and community forces (Nielsen, 1983; Steinberg, Blinde & Chan, 1982; Hirano-Nakanishi & Diaz, 1982). When Hispanic students enter school with socioeconomic, language, immigration, and other characteristics that distinguish them from majority students, they are thought to be served inadequately by standard school practices and policies, causing them to underachieve academically. As each sequential wave of school personnel meet Hispanic students, interactions are likely to build negatively upon the previous academic underachievement of and concomitant behavioral changes in these students (for example, "acting out," low self-esteem, and so on).

This mismatch between background and schooling is generally hypothesized to explain the differential patterns of premature school exit among Hispanic subgroups and between Hispanics and non-Hispanics, although many add that, because Hispanics are disportionately poorer than non-Hispanics, Hispanic teenagers also may be disproportionately "pulled out" of school to help support the family. The analysis reported here sheds no new light on these general hypotheses. Rather it focuses narrowly on the unexamined assumption that dropping out among Hispanics occurs in high school.

Studies have shown that compulsory attendance and child labor laws across the nation generally act to hold youth in school until the age of 16 years: 99 percent of all 10-13 year-olds and 98 percent of all 14-15 year-olds are enrolled in school (U.S. Bureau of the Census, 1978: 11-12). Since most 10th graders are 15 years old (Nielsen & Fernandez, 1981: 22), it is believed that youth, including those with propensities towards dropping out, at least make it to high school, and, therefore, it is assumed that dropping out is primarily a phenomenon which occurs at the high school level.

Based on these premises about dropping out, interventions have been designed to ameliorate the dropout problem. Bilingual, multicultural, and compensatory education programs are provided throughout the schooling process, primarily in an attempt to address the academic underachievement of differing types of youngsters. Interventions also have been implemented at the level in school where attrition is presumed to occur--high school. For example, work-study and extended day programs at the high school level have been geared towards helping poor youth to stay in school. Alternative high school programs for "potential" dropouts have been implemented to address these "at-risk" students' academic underachievement and mismatch with the regular high school environment.

In short, the above presents a brief scenario on the process of dropping out of school and measures taken to ameliorate the problem. The scenario, however, fails to take into account the nature of detailed age-grade distributions. Messick, Beaton and Lord note that "only about 70 percent of 9 year-old students are in grade 4, which is their modal grade, and a roughly similar percentage of students in grade 4 are nine year-olds, which is the modal age in that grade. Similar percentages hold for 13 year-olds and grade 8, while somewhat lower percentages (are observed) for 17 year-olds and grade 12" (1983: 24).

Since most students are delayed, rather than accelerated, in grade placement, it is possible that a relatively significant proportion of dropouts may have left school before reaching high school. Moreover, since Hispanic youth are considerably more delayed in their educational progress than others, or put another way, more overaged for their grade placement (Messick, Beaton & Lord, 1983; Nielsen, 1983; Nielsen & Fernandez, 1981; Brown, Rosen, Hill & Olivas, 1980; Carter & Segura, 1979; Veltman, 1976; Aspira, 1976), the extent of pre-high school attrition among Hispanics, indeed, may not be minor.

Statistics cited by Brown, Rosen, Hill and Olivas indicate that under 10 percent of Hispanic and non-Hispanic 8 to 13 year-olds and under 10 percent of non-Hispanic 14 to 20 year-olds are two or more years overaged for their grade levels, while almost one-quarter of all Hispanic 14 to 20 year-olds are overaged (1980: 80). This suggests that Hispanic youth are being delayed from making normal educational progress during post-elementary school grades in much greater numbers than non-Hispanics, obviously making the delayed Hispanic students older than the majority of their grade cohort. In this situation, it would not be unusual to find that these overaged Hispanic students are developmentally at odds with their grade-level "peers" and understandably frustrated with their progress in school.

While perhaps not central issues for substantive investigations regarding dropping out among Hispanics, the foregoing should suggest that delayed education and pre-high school attrition may be important issues to examine in models to premature exit from school and in policy analyses of dropping out, if empirical research evidences that these phenomena are significant.

Limitations in Empirical Work on Hispanics and Dropping Out

Empirical work to date has been limited by the nature of data sets used to investigate the Hispanics and dropping out. On the one hand, studies based on large scale surveys, like the Department of Labor's National Longitudinal Survey (DOL/NLS), may have national samples of Hispanics and provide important evidence on the salience of general factors such as parents' education on dropping out among Hispanics. However, because information on language, participation in bilingual education and other factors of special relevance for Hispanics often is crude or non-existent, issues of particular salience to Hispanics receive little compelling treatment (see Fligstein & Fernandez, 1982, for a discussion on the limitations of DOL/NLS for studying Hispanic achievement). On the other hand, in small scale studies, data on language skills and other information of particular importance for Hispanics often are very detailed, but the samples are small and restricted to very narrowly-defined populations. For example, Hirano-Nakanishi and Diaz (1982) examined Hispanic dropouts, graduates and college-bound graduates from language minority, low-SES families, employing a comprehensive array of interview, school record, test score and district data, but the study focused solely on 29 subjects of Mexican descent who entered one high school in one school district.

The National Center for Education Statistics (NCES) study, High School and Beyond (HS&B), was designed to combine the best features and avoid the worst limitations of the two types of data sets available to

date (Nielsen, 1983; Fernandez & Nielsen, 1983; So, 1982; Nielsen & Fernandez, 1981), and studies on Hispanics and dropping out based on this promising data set should be available by late 1984 (U.S. Department of Education, 1983).

In work on the potential of HS&B, however, researchers have noted that HS&B's sampling frame precluded the inclusion of cohort-aged youth who did not reach the 10th grade, and that findings based on HS&B should be interpreted as valid only for those youth who survived and progressed through the educational system to the point of entering high school (Nielsen, 1983; Fernandez & Nielsen, 1983; Chan & So, 1982; Nielsen & Fernandez, 1981).

The salience of this qualifier on the generalizability of HS&B findings is generally thought to be minor. As discussed above, compulsory attendance and child labor laws act to hold youth in school until the age of 16, and most students are not substantially delayed in their educational progress. For Hispanics, however, as is also suggested above, the extent of pre-high school attrition and school delay may not be unimportant, and sizable pre-high school attrition and delay rates among Hispanics can seriously limit the usefulness of HS&B in its contribution to academic and policy discussions and debates regarding Hispanics and dropping out.

If the extent of pre-high school attrition and delay rates is not large, it may be reasonable in many instances to suggest that HS&B findings regarding Hispanics, for example, are generalizable to all Hispanic youth who are the same ages as the subjects in HS&B. This would be extremely beneficial, since, for example, policymakers generally want to know how bilingual education affects retention of all Hispanic students, and not specifically how bilingual education affects the retention of those Hispanics who made it to high school. To the extent that delay and pre-high school attrition rates are small, the situation faced by the analyst is analogous to one in which there are a

small number of missing cases, and generalizations beyond the sampling frame may arguably be made. On the other hand, to the extent that the problems are salient, qualifiers regarding the generalizability of HS&B findings cannot be taken lightly, and there may be validity issues associated with the research (Berk & Ray, 1982).

Research Questions

Because of its relevance to models and interventions regarding dropping out and to interpretative considerations regarding the HS&B, this analysis focuses on ascertaining the size of pre-high school attrition among Hispanic youth. While estimates of pre-high school attrition for other relevant groups might also be made, cost considerations suggested that a limited focus on the group most likely to leave school before the 10th grade seemed the most efficient way to begin. Additionally, since Hispanics drop out of school at a rate far in excess of others, it seemed reasonable on a substantative basis to target attention upon a group most apparently in need. The broad research question that guides this analysis, then, is "When do Hispanics drop out of school?" Specifically, this analysis addresses three questions:

- What is the size of pre-high school attrition among Hispanic youth?
- Are there trends in school attrition by grade at departure among Hispanic youth dropouts?
- Do the results and discussion of this analysis suggest that HS&B may have limited generalizability in studies on Hispanic youth?

DATA

The Survey of Income and Education (SIE), conducted by the U.S. Bureau of the Census between April and July 1976, is used in this

analysis. The survey sample consisted of 51 independent state samples that totaled about 150,000 interviewed households and yielded information on roughly a half million individuals. Because of its large sample size, the oversampling of disadvantaged minorities and the disaggregation of ethnic groups according to specific national origins, the SIE is particularly well suited for studying many issues regarding Hispanics. Included as Hispanics in this analysis are all persons who, when shown flashcards with twenty-nine origins listed, selected Mexican American, Chicano, Mexican, Mexicano, Puerto Rican, Cuban, Central or South American, or Other Spanish.

Analysis is further restricted to Hispanic persons aged 14 to 25 years to correspond with previous statistics reported on Hispanic youth and school attrition (Brown, Rosen, Hill & Olivas, 1980; Silverman, 1978). Also, only Hispanics who attended some schooling in the U.S. are included in the analysis, since inclusion of Hispanics who did not attend U.S. schools can lead to misleading conclusions about Hispanics who have left the U.S. school system prematurely. Hirano-Nakanishi (1983) provides technical information and a discussion on Hispanics who have not attended U.S. schools.

In this analysis, "dropout" is defined using the standard survey designation: a person who is "not currently enrolled in school" and who has "not completed 12 years of schooling" (Brown, Rosen, Hill & Olivas, 1980; Silverman, 1978; U.S. Commission on Civil Rights, 1978). While the term "dropout" is used throughout this analysis, readers are cautioned that the term includes persons who more accurately might be called "pull-outs" (e.g., those lured out of school into the labor force) and "push-outs" (e.g., those who were forced out of school by educational policies) (for additional discussion on these distinctions, see Nielsen, 1983; Steinberg, Blinde & Chan, 1982). "Grade at time of departure from school" is defined as the highest grade that a subject attended. For statistics presented in the descriptive section on the pre-high school attrition and delayed education, variables generally are defined by SIE documentation.

Finally, each person's record in the SIE has a unique weight associated with it. These weights take into account the sample design as well as particular demographic characteristics of the sampling units. The use of these weights allows for estimates which approximate the distribution of the total population of the U.S. Statistics in this analysis have been based on the weighted sample in order to provide population estimates. Tables show weighted population numbers and percentages. Standard errors or confidence intervals are not reported in the tables; however, the tables and the information provided in Appendix A permit the calculation of approximate standard errors for estimated numbers and percentages.

FINDINGS AND DISCUSSION

The Size of Pre-High School Attrition

Of over 2.3 million Hispanic youth, about a half million were dropouts (roughly 20 percent). Table 1 presents the estimated number and percentage of Hispanic dropouts for the grade in school at the time of departure. (Grades 1 through 5 were combined, because estimated numbers and percentages for each grade level were extremely small.)

Table 1. Estimated Number and Percentage of Hispanic Dropouts, Aged 14 to 25 Years, by Grade in School at Time of Departure: Spring 1976 (Numbers in Thousands)

GRADE	NUMBER	PERCENTAGE
1-5	18	4%
6	20	4%
7	24	5%
8	55	11%
9	92	19%
10	98	20%
11	149	30%
12	34	7%
TOTAL	490	100%

Source: Survey of Income and Education, 1976.

Regarding the broad question of pre-high school attrition among Hispanics, Table 1 indicates that an estimated 209,000 Hispanics, or 43 percent of all Hispanic dropouts, left school before reaching the 10th grade. Of these pre-high school dropouts, the majority (82 percent, 171,000) left school during the grades 7 through 9. While a pre-high school attrition rate of 9 percent (20 percent x .43) among 14-25 year-old Hispanics may not suggest a severe problem, the estimates that over 40 percent of all Hispanic dropouts, aged 14-25 years, leave school before the 10th grade and that they number over 200,000 suggest the existence of a significant phenomenon which demands research efforts.

Trends for Hispanic Dropouts on School Attrition by Grade Level

Figure 1 presents a visual display of information contained in Table 1, and it gives some indication of trends in school attrition by grade at departure among Hispanic dropouts. Figure 1 shows that the number and percentage of Hispanic dropouts increase monotonically by grade level until the 12th grade when there is a sharp decline. This decline is consistent with the notion that school attrition should peak before the senior year in high school, since most who stay it to their senior year are very close to meeting necessary requirements for high school graduation and are, therefore, unlikely to leave school at this "final" level.

At the lower grades, Figure 1 shows little difference between the elementary level and the first year of junior high school. During the balance of junior high school, the percentage of Hispanic dropouts markedly increases at each additional grade. Between the 9th and the 10th grades, there is another apparent levelling off, followed by a sharp peaking at the 11th grade, when 30 percent of all Hispanic dropouts, or almost 150,000 Hispanics, leave school. Thus, Figure 1 suggests that there are several grade levels when something is happening among Hispanics which affects their propensities to leave school.

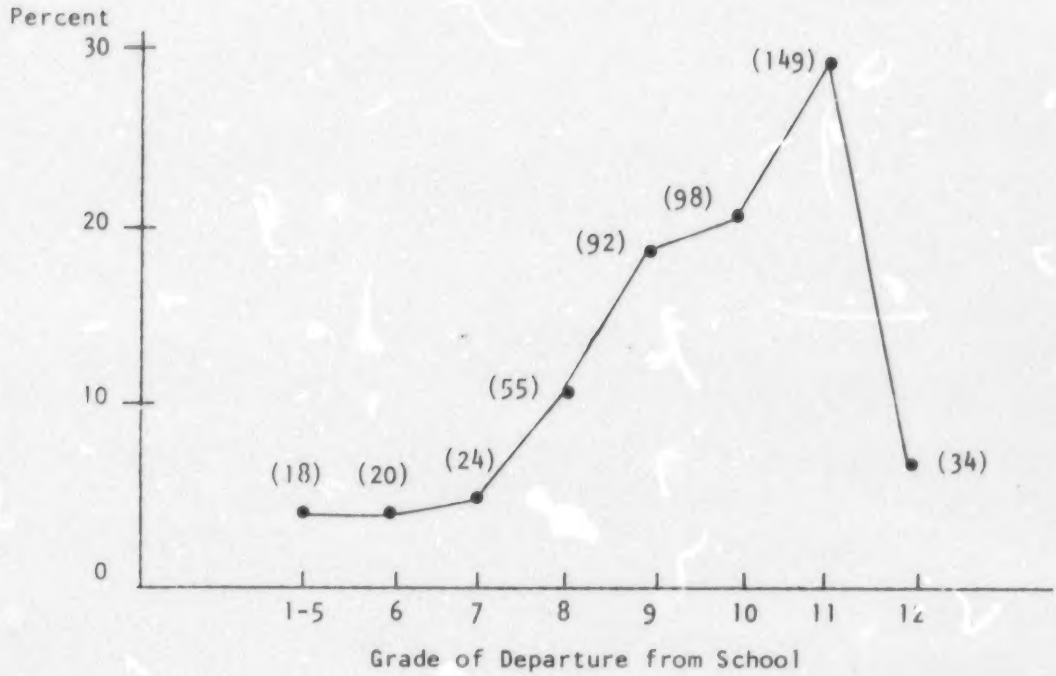

Figure 1. Estimated Number and Percentage of Hispanic Dropouts, Aged 14 to 25 Years, at Grades of Departure from School: Spring 1976 (Numbers in thousands and in parentheses)

Source: Survey of Income and Education, 1976.

An explanation of the apparent plateauing between elementary and junior high school levels and between junior and senior high school levels may be that as Hispanics with propensities towards dropping out reach and enter higher categorical levels of education, they initially try to stay in school. This explanation is consistent with the finding that Mexican American high school dropouts and graduates do not differ markedly on predictors of dropping out until the eighth grade, at which point the eventual dropouts showed markedly increased absenteeism, lower grade point averages and distance from the school than the eventual high school graduates (Hirano-Nakanishi & Diaz, 1982).

As suggested earlier, one generally expects the percentage of dropping out by grade level to be relatively flat and small until the high school grades when sharp increases should occur. Hispanic youth's departure from this presumed norm may be partially explained by Hispanic youth being delayed from normal educational progress during post-elementary school grades. Over and above other factors that influence the act of dropping out, these delayed Hispanic students are older than the majority of students in the post-elementary grade levels. As such, many may be in situations where they are developmentally at odds with their grade-level "peers." It is easy, for example, to understand how 16 year-olds in the 8th grade with primarily 13-year-old classmates might feel that they are among "babies" or "kids". Additionally, the simple act of being delayed from making normal educational progress, as well as additional stresses if delay occurs during adolescent years, could make the delayed students subject to frustration with the whole schooling process.

The cause of increased delays in educational progress among Hispanic youth in post-elementary grades is an open question. Two possible explanations come to mind: First, a substantial number of first-generation immigrant youth may be entering U.S. schools in their adolescent years, and local school policies may act to place these students in lower than expected grade levels. Second, it may be that

elementary school policies on grade retention differ sharply from secondary level policies. In elementary grades, students generally are promoted because of satisfactory performance across subject areas as assessed by one teacher. In secondary schools, progression in grades typically is measured by the accumulation of credits in required courses (like 7th grade English, 9th grade American History, or 8th grade Math).

Related Analyses

Because the findings of this analysis suggest that pre-high school attrition is a significant issue for Hispanics, additional analyses were performed to examine whether the principal findings overstate the size and trends of pre-high school attrition. For example, it is possible that Hispanics, aged 14-25 years, who did not attend school in the U.S. were not completely excluded in the analysis. In general, all Hispanics whose years of foreign schooling equalled or was greater than the highest grade attended were excluded from this analyses. In addition, however, Hispanics who at their age of arrival in the U.S. were within a few years of expected grade placement were left in the sample to allow for a reasonable possibility that many of these students may well have entered U.S. schools. This modification to the basic formula could affect dropout statistics in this analysis.

To examine this possibility, analysis was re-executed using the more restrictive, basic formula. Results indicated that while the overall number of dropouts was reduced by an estimated 50,000 persons, the pre-high school attrition rate remained at a comparable 41 percent, the plateaux were evidenced, the increases by grade level with the peaking at the 11th grade and the sharp decline at the 12th grade were similar, and the predominance of pre-high school attrition at the junior high level remained intact.

It also seemed plausible that a substantial number of Hispanics may be severely handicapped and unable to attend school, thus partially explaining the large number pre-high school dropouts. Analyses indicated that only an estimated 3,900 Hispanic youth were severely handicapped and unable to attend school, a number that would make but a small dent in the estimated 209,000 pre-high school dropouts.

Additionally, it may be that pre-high school attrition among Hispanics was a problem for the older, 19 to 25 year old Hispanics, but is not particularly salient for the younger, 14 to 18 year-olds. Analysis was re-performed using the younger cohort, and results showed that of 128,000 dropouts, 67,400 left school before the 10th grade. That is, an estimated 52 percent of all 14-18 year-old dropouts left school before the 10th grade. This re-analysis indicates that the proportion of school attrition among 14-18 year old Hispanics that occurs in pre-high school grades is at least as large (and perhaps larger than) that among 19-25 year olds. Using the same 14-18 year-old sample, it also was possible to examine whether the observed trends in school attrition by grade at departure for Hispanic dropouts was largely determined by the older Hispanics of the 14-25 year old sample. Results did not support this notion.

Lastly, there could be problems with the survey itself. In particular, since only one household member gave information regarding all others in the household, it is possible that in reporting the highest grade that others in the household attended, systematically low grade levels were given. There is, of course, no way to examine this issue with available data. However, if systematically biased reporting on the question of highest grade attended is occurring generally or, in a more limited way, among Hispanics, almost all the social indicators of educational attainment that are currently used are open to criticism regarding validity or bias.

The Relevance of this Analysis for Studies Based on High School and Beyond (HS&B)

The above analysis indicates that pre-high school attrition is a substantively significant issue for Hispanics. This section focuses on the issue of whether HS&B's non-inclusion of pre-high school dropouts seriously limits the generalizability of findings. Essentially, if there is a large number of non-included youth relative to inclusions and if they differ substantially from the included youth on dependent and independent variables, the departure will be most severe. The smaller the proportion of non-included youth, the less severe the departure, other things being equal.

Examination of the age distribution of HS&B sophomores reveals that almost 90 percent of them were 15 and 16 years old at the time the survey was conducted with the age of 15 being the modal age for the grade (National Opinion Research Center, 1980; Nielsen & Fernandez, 1981). For the most part, then, in order to estimate the number of non-included pre-high school dropouts, one is primarily interested in the 15 and 16 year-olds who left school before reaching the 10th grade. In addition, 15 and 16 year-olds who, through delay, were enrolled in the 9th grade or below also are not included in the HS&B sampling frame. Putting these statements in other terms, one is primarily interested in pre-high school dropouts and those in the 9th grade or below who were at the modal-age and modal-age-plus-1 for the 10th grade.

Table 2 presents distributional information for sophomore-aged Hispanic youth based on the 1976 SIE.

Table 2. Estimated Percentage of Hispanics at the Modal-Age and the Modal-Age-Plus-One for the 10th Grade, Who Entered High School Grades, Who Were Enrolled in Pre-High School Grades, and Who Were Pre-High School Dropouts: Spring 1976

Factors	Percentage
Entered high school	80%
Enrolled in 9th grade or less	14%
Pre-high school attrition	6%

Source: Survey of Income and Education, 1976.

Note: Percentages based on an estimated 471,000 persons.

Statistics in this table suggest that 6 percent of all 15 and 16 year-olds are pre-high school dropouts, and an additional 14 percent, through delay in educational progress, are enrolled at the junior high school level. The balance of 15 and 16 year-olds, the vast majority, at least entered high school.

Pre-high school attrition alone, then, should not severely affect the generalizability of HS&B findings. However, together with delay, a sizable percentage (20 percent) of sophomore-aged youth are not reflected in the sampling frame of HS&B. At the least, then, it is important to stress the limitations of HS&B findings, except in certain instances--the most obvious being the case in which it is known or can be safely assumed that non-included youth do not differ from included youth on independent and dependent variables. In this case, findings are generalizable, but standard errors of estimates may be large, resulting in imprecise estimations (for extended discussion of these and on other issues, see Heckman, 1979; Berk & Ray, 1983).

Descriptive Statistics Regarding Non-Included Hispanics

Given the conceptual and methodological saiience of pre-high school attrition and delay among Hispanics, a brief discussion of relationships between these issues and other characteristics of interest closes the analysis. Using the sample from the previous section (since this descriptive information may prove especially useful for analysts employing the HS&B dataset), nine tables are presented. The first, Table 3, presents information regarding non-inclusion, pre-high school attrition and delayed education rates in the ten states with the largest sophomore-aged Hispanic populations (about 90 precent of the total).

Table 3. Estimated Percentage of Hispanics at the Modal-Age and the Modal-Age-Plus-One in the 10th Grade, Who Were Not Included in the HS&B Sampling Frame, Who Were Pre-High School Dropouts, or Who Were Delayed in Education, By the Ten States with the Largest Hispanic Samples and Total: Spring 1976 (Numbers in thousands)

STATE	TOTAL	% TOTAL NON-INCLUDED	% PRE-HS DROPOUT	% DELAYED
California	148	13.0	3.6	9.4
Texas	117	23.7	8.2	15.5
New York	46	33.4	4.1	29.3
Florida	23	34.8	0.0	34.8
New Mexico	22	14.1	3.6	10.5
Illinois	20	20.6	8.5	12.1
Arizona	16	20.8	9.6	11.2
Colorado	15	18.9	5.2	13.7
New Jersey	13	34.8	18.7	16.1
Michigan	6	20.3	10.2	10.2
TOTAL ALL STATES	471	19.8	5.8	14.0

Source: Survey of Income and Education, 1976.

Aspira (1976) and Carter and Segura (1979) have argued that delays in educational progress depend, in large measure, on governmental policies regarding retention. Put another way, they suggest that school delay is not solely a function of Hispanics' scholastic underachievement, but also a function of differential state and local educational policies. Table 3 indicates wide variation among states with respect to delay. While it is possible that underachieving Hispanics may be distributed in a fashion to account for the variation, there is some evidence to suggest otherwise. For example, Florida has the highest delay rates, but previous research suggests that Cubans, who are disproportionately found in that state, tend to have higher scholastic achievement rates than other Hispanics (Nielsen & Fernandez, 1981). Also, New York, which has the second highest delay rate, has traditionally had a strong, albeit informal, retention policy, and there now is a strong and formal policy of retention, at least in New York City where most Hispanics in that state reside (see Gorth & Perkins, 1979).

Table 3 also suggests that New Jersey, Michigan and Arizona tend to exhibit high pre-high school attrition rates relative to other states. While this analysis does not speculate about New Jersey and Michigan, previous analyses have shown that Arizona state policy regarding school-leaving may explain that state's higher rate: In Arizona, students are allowed to leave school at the age of 16 or grade 8, whichever comes first (Children's Defense Fund, 1974). Note also that Florida stands out for its absence of pre-high school dropouts. Finally, Table 3 suggests that in regional analyses based on the HS&B, HS&B samples are clearly non-representative of cohort-aged youth, for New York, New Jersey and Florida, whereas it might be argued that a California sample is relatively close to full representation.

In the literature on Hispanic youth's school and labor market achievement, at least eight variables have been identified as important predictors of achievement: some measure of family socioeconomic status; sex; Hispanic group membership; language use characteristics; English language proficiency; nativity; length of residence in the United States for foreign-borns; and years of foreign schooling for foreign-borns (for a general review on most of the factors, see Fernandez & Hirano-Nakanishi, 1983; see Lopez, 1982, regarding the last factor). Descriptive statistics regarding pre-high school attrition, which can be viewed as a measure of educational attainment, have never been reported, and descriptive statistics regarding school delay with respect to these eight variables generally are incomplete (Aspira, 1976; Brown, Rosen, Hill & Olivas, 1980). The following tables present crosstabular information regarding these eight variables and non-inclusion, pre-high school attrition, and delayed education rates.

Table 4 employs the same framework as Table 3, except that in Table 4 crosstabulation is by socioeconomic status (SES) divided into thirds. The particular SES measure used in this table was constructed using information about family income and poverty level cut-offs for the particular type of family in order to capture some sense of per capita economic need. If poverty is not related to non-inclusion, pre-high school attrition and delayed education, then the percentages in columns 2, 3, and 4 of Table 4 should respectively read 19.8 percent, 5 percent and 14 percent. Table 4 suggests that there are relationships, perhaps most strikingly with respect to attrition. Hispanic youth in the bottom-third of the SES distribution (poverty level and below) leave school before reaching high school at two to five times the rates of their more advantaged counterparts, suggesting support for the hypothesis that many poor youth leave school to help support the family (Rumberger, 1981). Non-inclusion rates and distributional frequencies also tell us that poorer sophomore-aged Hispanics are likely to more underrepresented in the HS&B samples than their more advantaged counterparts.

Table 4. Estimated Percentage of Hispanics at the Modal-Age and the Modal-Age-Plus-One in the 10th Grade, Who Were Not Included in the HS&B Sampling Frame, Who Were Pre-High School Dropouts, or Who Were Delayed in Education, By SES in Thirds: Spring 1976 (Number in thousands)

SES	TOTAL	% TOTAL NON-INCLUDED	% PRE-HS DROPOUT	% DELAYED
Bottom Third	161	29.8	11.8	18.0
Middle Third	158	17.7	4.4	13.3
Top Third	153	11.5	2.0	9.5
TOTAL	471	19.8	5.8	14.0

Source: Survey of Income and Education, 1976.

Table 5 suggests that males being more delayed than females primarily explains the difference in non-inclusion rates between males and females, and this suggests that females may do better than males academically, which would account for the delay differential. These statistics, unlike the previous, do not suggest to any great degree that sophomore-aged female Hispanics are likely to be more underrepresented in HS&B samples than males.

Table 5. Estimated Percentages of Hispanics at the Modal-Age and the Modal-Age-Plus-One for the 10th Grade, Who Were Not Included in the HS&B Sampling Frame, Who Were Pre-High School D-opouts, or Who Were Delayed in Education, By Sex: Spring 1976 (Numbers in thousands)

SEX	TOTAL	% TOTAL NON-INCLUDED	% PRE-HS DROPOUT	% DELAYED
Female	221	16.9	6.0	10.9
Male	250	22.4	5.6	16.8
TOTAL	471	19.8	5.8	14.0

Source: Survey of Income and Education, 1976.

Since it is well known that Hispanics' achievement differs by subgroups (see, e.g., Nielsen & Fernandez, 1981), the variation among Mexican Americans, Puerto Ricans and Other Hispanics (Cubans and Other Latin Americans) shown in Table 6 is not particularly surprising. Using Mexican American statistics as the baseline for comparisons (since they constitute about 67 percent of all Hispanics), Table 6 indicates that Puerto Ricans are disproportionately delayed in education, while Other Hispanics are particularly unlikely to be pre-high school dropouts. Since Puerto Ricans reside disproportionately in states like New York and New Jersey, this finding is perhaps not surprising given the discussion of Table 3. The finding regarding Other Hispanics generally is consistent with other conceptual and empirical work which suggests that the higher SES and the more privileged immigration history of Other Hispanics tend to account for their relative educational advantages (see, e.g., Nielsen & Fernandez, 1981; Fernandez & Hirano-Nakanishi, 1983). Finally, Table 6 suggests that sophomore-aged Puerto Rican youth are likely to be more underrepresented in the HS&B samples than Mexican American counterparts; Other Hispanic youth are more likely to be overrepresented.

Table 6. Estimated Percentage of Hispanics at the Modal-Age and the Modal-Age-Plus-One in the 10th Grade, Who Were Not Included in the HS&B Sampling Frame, Who Were Pre-High School Dropouts, or Who Were Delayed in Education, By Ethnicity and Total: Spring 1976 (Numbers in thousands)

ETHNICITY	TOTAL	% TOTAL NON-INCLUDED	% PRE-HS DROPOUT	% DELAYED
Mexican American	316	19.6	6.5	13.1
Puerto Rican	68	30.9	7.9	23.0
Other Hispanic	87	11.7	1.6	10.1
TOTAL	471	19.8	5.8	14.0

Source: Survey of Income and Education, 1976.

Table 7 contains statistics by individual language use characteristics. These characteristics were constructed using three SIE items (What language do you usually speak?; Do you speak any other language often?; and What other language do you speak?). Table 7 indicates a clear relationship between individual language characteristics and non-inclusion, pre-high school attrition and delayed education rates.

Table 7. Estimated Percentage of Hispanics at the Modal-Age and the Modal-Age-Plus-One in the 10th Grade, Who Were Not Included in the HS&B Sampling Frame, Who Were Pre-High School Dropouts, or Who Were Delayed in Education, By Individual Language Use Characteristics: Spring 1976. (Numbers in thousands)

INDIVIDUAL LANGUAGE USE	TOTAL	% TOTAL NON-INCLUDED	% PRE-HS DROPOUT	% DELAYED
English Monolingual	169	16.2	4.1	11.9
English Dominant Bilingual	213	14.6	3.2	11.4
Non-English Dominant Bilingual	77	32.7	8.6	24.1
Non-English Monolingual	12	79.1	55.6	24.5
TOTAL	471	19.8	5.8	14.0

Source: Survey of Income and Education, 1976.

It should come as no surprise that non-English monolingual Hispanics tend to leave school before reaching the 10th grade at a high rate (55.6 percent). If school is difficult for Hispanics in general, inability to understand what it going on in school adds greatly to the difficulties. To the extent that some English is spoken, pre-high school attrition is much less evident (8.6 percent), although the delay rate remains at the one-quarter mark. It seems plausible that limited English proficiency may be an issue here: Academic underachievement may result from this limitation and retention may follow. English monolinguals and English dominant bilinguals, who dominate the sample (382,000; 81 percent of the total), have roughly the same statistics. This is consistent with other research on delayed education which suggests that use of a non-English language given basic English language proficiency does not harm and may, in fact, be beneficial for Hispanic youth achievement (Nielsen & Fernandez, 1981; Veltman, 1976).

Table 7 also suggests that sophomore-aged non-English dominant bilinguals and non-English monolinguals are likely to be underrepresented in HS&B samples. In fact, it would seem very unlikely to find many non-English monolinguals in the HS&B sample at all (12/471 x 21.9 = .58 percent).

Table 8 presents data by self-reported ability to speak English. While statistics for the first two categories of English-speaking ability are extremely unreliable given small estimated sample sizes, it seems clear that the self-reported lack of ability of speak English is related to pre-high school attrition and delayed education. Further, sophomore-aged Hispanics who report that they speak little or no English probably are barely represented at all in the HS&B samples, and those who state that they speak English "well" are more likely to be underrepresented in HS&B samples than counterparts who say they speak English "very well."

Table 8. Estimated Percentage of Hispanics at the Modal-Age and the Modal-Age-Plus-One in the 10th Grade, Who Were Not Included in the HS&B Sampling Frame, Who Were Pre-High School Dropouts, or Who Were Delayed in Education, By Self-Reported Ability to Speak English: Spring 1976 (Numbers in thousands)

ABILITY TO SPEAK ENGLISH	TOTAL	% TOTAL NON-INCLUDED	% PRE-HS DROPOUT	% DELAYED
Not at all or a few words	7	98.5	74.2	24.3
More than a few words	8	50.6	25.9	24.7
Well	35	30.6	11.4	19.2
Very well	343	19.0	3.8	15.2
TOTAL	393	19.8	5.8	14.0

Source: Survey of Income and Education, 1976

Table 9 shows that the disproportionate delay of foreign-born Hispanics may explain the differential between foreign-born and U.S.-born youth on non-inclusion, and Table 10 suggests that the rate of delay among foreign-born Hispanics is not explained by the number of years that they have been in the U.S. Delay, then, tends to occur among foreign-born Hispanics regardless of the age at which they came to the United States. Table 10, however, also indicates that if immigrant children came to U.S. at about the age of 11 years or less, they are not expected to be pre-high school dropouts (2.1 and 0 percent). However, those who came around the age of 12 years or more are fairly likely to be pre-high school dropouts. Around this age range, most students are likely to be leaving elementary school or entering junior high school. Thus, it seems plausible that these adolescent immigrant youth may experience initial out-of-age grade placement or post-elementary school delay which promotes pre-high school attrition.

Table 9. Estimated Percentage of Hispanics at the Modal-Age and the Modal-Age-Plus-One in the 10th Grade, Who Were Not Included in the HS&B Sampling Frame, Who Were Pre-High School Dropouts, or Who Were Delayed in Education, By Birthplace and Total: Spring 1976 (Numbers in thousands)

BIRTHPLACE	TOTAL	% TOTAL NON-INCLUDED	% PRE-HS DROPOUT	% DELAYED
US-Born	378	16.7	5.5	11.2
Foreign-Born	93	32.5	7.2	25.3
TOTAL	471	19.8	5.8	14.0

Source: Survey of Income and Education, 1976.

Table 10. Estimated Percentages of Hispanics at the Modal-Age and the Modal-Age-Plus-One in the 10th Grade, Who Were Not Included in the HS&B Sampling Frame, Who Were Pre-High School Dropout, or Who Were Delayed in Education, By Years in U.S. and Total Foreign-Borns Only: Spring 1976 (Numbers in thousands)

YEARS IN U.S.	TOTAL	% TOTAL NON-INCLUDED	% PRE-HS DROPOUT	% DELAYED
0-6	41	41.1	15.0	26.1
7-11	29	23.5	2.1	21.4
12 or more	23	29.2	0.0	29.2
TOTAL FOREIGN-BORN	93	32.5	7.2	25.3

Source: Survey of Income and Education, 1976.

Table 11 shows statistics for foreign-born Hispanics by years of schooling outside the United States. The information contained in this table is not easy to interpret. Generally, it seems plausible that the immigrant youth who had no schooling outside the U.S. probably also entered the U.S. before the age of school entry. If this is true, then row 3, column 4 of Table 10 covaries with the apparently odd delay rate (row 1, column 4 of Table 11). That is, foreign-born Hispanics who come to the United States before the age of entering school experience delayed education, but do not drop out of school before entering high school. Table 11 also indicates pre-high school attrition and delay are especially pronounced among immigrant youth who enter the U.S. with 7 or more years of foreign schooling. In this case, youth probably experience out-of-age placement when they arrive in U.S. schools at the junior high level, perhaps to the extent that pre-high school leaving is encouraged. If years of foreign schooling had a monotonic relationship with delay, we'd expect to find

that immigrant youth with 1 to 6 years of schooling outside the U.S. to experience more delayed education than those with none. This is not the case with these data, and, hence, an overall interpretation for Table 11 is difficult to suggest.

Table 11. Estimated Percentage of Hispanics at the Modal-Age and the Modal-Age-Plus-One in the 10th grade, Who Were Not Included in the HS&B Sampling Frame, Who Were Pre-High School Dropouts, or Who Were Delayed in Education, By Years of Schooling Outside of the U.S. for Foreign-Borns Only: Spring 1976 (Numbers in thousands)

YEARS OF SCHOOLING OUTSIDE U.S.	TOTAL	% TOTAL NON-INCLUDED	% PRE-HS DROPOUT	% DELAYED
None	28	27.4	0.0	27.4
1-6	49	27.1	8.1	19.0
7 or more	16	58.2	17.1	41.1
TOTAL FOREIGN-BORN	93	32.5	7.2	25.3

Source: Survey of Income and Education, 1976.

CONCLUSIONS

In this analysis, it was estimated that about 40 percent of all Hispanic dropouts, aged 14 to 25 years, leave school before reaching the 10th grade, and most of these pre-high school dropouts leave school at the junior high school level. Examination of trends suggested increasing school attrition from grade 7 to a peak at grade 11, when 30 percent of all Hispanic dropouts leave school. Additionally, there appear to be plateaux between elementary school grades and entry into junior high school and between junior high school completion and entry into high school. A sharp decline in dropping out from the 11th to 12th grades also was noted.

A few possible explanations regarding these observations were suggested:

- The sharp decline in dropping out from the 11th to the 12th grades may be related to the notion that those who achieve senior status are very close to meeting high school graduation requirements and, thus, are unlikely to drop out.
- The observed plateaux may be related to the idea that in entering each new level of schooling, those with propensities toward dropping out may try to stay in school, at least initially.
- The departure of Hispanic youth from a presumed norm regarding school attrition at grade levels may be related to the hypothesis that in post-elementary grades a substantial portion of Hispanic youth are delayed in their educational progress, making them older than the majority of their grade cohort. Frustration with delayed progress and developmental differences with grade-level "peers" may add to other factors among these overaged youth, which together may cause increasing school attrition in post-elementary grades, beginning with junior high grades.

It was further suggested that the extent of pre-high school attrition and delay among Hispanic youth is serious enough to warrant careful qualifications on the generalizability of HS&B data, at least in relation to studies about Hispanic youth.

Descriptive statistics regarding pre-high school attrition and delay suggest that regional differences in policies regarding school-leaving and delay may exist, that sophomore-aged Puerto Ricans are most likely to experience delay among Hispanic subgroups, and that socioeconomic, language-related and immigration factors are related to delay and pre-high school attrition. Discussion also suggested the extent to which certain types of sophomore-aged Hispanics are more underrepresented than sophomore-aged counterparts in the HS&B samples.

A few implications are suggested from the findings and discussion. First, it would seem important to examine the extent of pre-high school attrition and school delay for other relevant groups (e.g., White non-Hispanics, Black non-Hispanics, Pacific Asians, and Pacific Asian subgroups) in order to determine whether the presumed norm regarding school attrition, that is, relatively flat and small percentages of dropping out by grade level until high school grades, can be validated empirically, or whether groups other than Hispanics also show high proportions of pre-high school attrition and school delay.

Statistics on various types of educational factors often are used to provide social indicators of educational achievement or lack of achievement (U.S. Commission on Civil Rights, 1978). Additionally, Social indicators often help to signal problems which may require intervention and to show progress in addressing problem areas. For example, some suggest that the dropout statistics of the '50s and early '60s signaled the need for programs and policies to address school attrition, and the statistics of the late '60s and '70s indicated that the problem generally was assuaged, at least for non-Hispanics (Steinberg, Blinde & Chan, 1982; Carnegie Council, 1979). The second implication of this analysis, then, is that pre-high school attrition statistics may be useful social indicators to keep on a regular basis.

Third, it would seem important to develop appropriate data bases to study the dynamics of school delay and pre-high school attrition, at least for Hispanics, in order to test hypotheses suggested in this analysis and to develop information which can help policymakers as they plan and implement grade appropriate intervention strategies to alleviate the apparently interrelated problems. HS&B, while the best extant dataset to date for exploring issues regarding Hispanic youth and dropping out, is not sufficient for these purposes.

REFERENCES

Aspira. (1976). Social Factors in Educational Attainment among Puerto Ricans in U.S. Metropolitan Areas, 1970. (Puerto Ricans and Education Report #1). New York, NY: Author.

Berk, Richard A., and Subnah Ray. (1982). Selection biases in sociological data. Social Science Research 11: 352-398.

Brown, George H., Nan L. Rosen, Susan T. Hill, and Michael A. Olivas. (1980). The Condition of Education for Hispanic Americans. (NCES-80-303). Washington, DC: U.S. Government Printing Office.

Carnegie Council on Policy Studies and Higher Education. (1979). Giving Youth a Better Chance: Options for Education, Work, and Service. San Francisco, CA: Jossey-Bass.

Carter, Thomas P., and Roberto D. Segura. (1979). Mexican Americans in School: A Decade of Change. New York, NY: College Entrance Examination Board.

Chan, Kenyon S., and Alvin Y. So. (1982). The Impact of Language of Instruction on the Educational Achievement of Hispanic Students. (TN-6). Los Alamitos, CA: National Center for Bilingual Research.

Children's Defense Fund. (1974). Children Out of School in America. Cambridge, MA: Author.

Coleman, James, Thomas Hoffer, and Sally Kilgore. (1981). Public and Private Schools. Report to the National Center for Education Statistics. Chicago, IL: National Opinion Research Center.

Fernandez, Roberto M. (1983). Response Inconsistency in High School and Beyond Language Data. Report to the National Center for Education Statistics. Chicago, IL: National Opinion Research Center.

Fernandez, Roberto M., and Marsha J. Hirano-Nakanishi. (1983). Analysis Studies of NCES Longitudinal Studies Data, Topic 3: Educational and Occupational Activities of Hispanic Youth -- Final Research Design Statement. Report to the National Center for Education Statistics. Los Alamitos, CA: National Center for Bilingual Research.

Fernandez, Roberto M., and Francois Nielsen. (1983). Bilingualism and Hispanic scholastic achievement: Some baseline results. An earlier version of this paper was presented at the American Sociological Association meetings, San Francisco, September 1982.

Fligstein, Neil, and Roberto M. Fernandez. (1982). Educational transitions of Whites and Mexican Americans. Paper presented at the Hispanic Labor Market Conference, Santa Barbara, CA, February 4-5, 1982.

Garcia, Philip. (1983). Dual-Language Characteristics and Earnings: Male Mexican Workers in the United States. Los Angeles, CA: Population Research Laboratory, University of Southern California.

Gorth, W., and M. Perkins. (1979). A Study of Minimum Competency Testing Programs: Final Comprehensive Report. Report to the National Institute of Education. Amherst, MA: National Evaluation Systems, Inc.

Heckman, James J. (1979). Sample selection bias as a specification error. Econometrica 47 (1, January): 153-161.

Hirano-Nakanishi, Marsha J. (1982). High School and Beyond: Issues regarding the Language File, Bilingual Participation and Tests. (TN-9). Los Alamitos, CA: National Center for Bilingual Research.

Hirano-Nakanishi, Marsha J. (1983). Hispanic Youth Who Did Not Attend School in the United States: Their Relevance, Estimates, and Discussion. Los Alamitos, CA: National Center for Bilingual Research.

Hirano-Nakanishi, Marsha J., and R. Leticia Diaz. (1982). Differential Educational Attainment Among "At-Risk" Youth: A Case study of Language Minority Youth of Mexican Descent and Low Socioeconomic Status. Los Alamitos, CA: National Center for Bilingual Research.

Lopez, David E. (1982). The Effect of Schooling Abroad on the Socioeconomic and Language Patterns of First Generation Hispanics and East Asians. (TN-7). Los Alamitos, CA: National Center for Bilingual Research.

Messick, Samuel, Albert Beaton, and Frederic Lord. (1983). National Assessment of Educational Progress Reconsidered: A New Design for a New Era. Princeton, NJ: Educational Testing Service.

National Center for Education Statistics. (1983). Data tape available for first follow-up data on High School and Beyond sophomores. (NCES Announcement, July 1983.)

National Opinion Research Center. (1980). High School and Beyond Information in Users of Base Year (1980) Data: Version 1, December 1980. Report to the National Center for Education Statistics. Chicago, IL: Author.

Nielsen, Francois. (1983). Hispanics in High School and Beyond. Paper presented at the Educational Testing Service Conference on Latino College Students, Princeton, NJ, January 28-29, 1983.

Nielsen, Francois, and Roberto M. Fernandez. (1981). Achievement of Hispanic Students in American High Schools: Background Characteristics and Achievement. (Contractor's Report). Washington, DC: National Center for Education Statistics.

Rumberger, Russell W. (1981). Why Kids Drop Out of High School. (81-B4). Stanford, CA: Institute for Research on Educational Finance and Governance, School of Education, Stanford University.

Silverman, Leslie J. (1978). The educational disadvantage of language-minority persons in the United States, Spring 1976. NCES Bulletin, 78-B-4, July 1978.

So, Alvin, Y. (1982). The High School and Beyond Data Set: Its Relevance for Bilingual Research. (TN-5). Los Alamitos, CA: National Center for Bilingual Research.

Steinberg, Laurence, Patricia Lin Blinde, and Kenyon S. Chan. (1982). Dropping Out among Language Minority Youth: A Review of the Literature. (Report #02-82). Los Alamitos, CA: National Center for Bilingual Research.

U.S. Bureau of the Census. (1978). Current Population Reports, Series P-20. (No. 346). Washington, DC: U.S. Government Printing Office.

U.S. Commission on Civil Rights. (1978). Social Indicators of Equality for Minorities and Women. Washington, DC: U.S. Government Printing Office.

U.S. Department of Education. Office of Procurement and Assistance Management. (1983). Analysis Studies of NCES Longitudinal Studies Data. (RFP #83-040). Washington, DC: Author.

Veltman, Calvin J. (1976). Relative Educational Attainment of Minority Language Children. (Contractor's Report). Washington, DC: U.S. Government Printing Office.